

Traumatic lung cyst

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Introduction

Pulmonary contusion consists of the exudation of oedema, fluid and blood into the parenchyma of the lung in both its air space and interstitial components, in the absence of substantial tissue disruption. Rather uncommonly, closed chest trauma results in the development of lung cysts, i.e. one or more spaces within the lung that can remain air-filled, or be filled partly or completely with blood. Though history of chest trauma makes diagnosis easy, unnecessary examination and treatment might be offered by clinicians without knowledge of this disease.

Case Report

A 27-year-old man was admitted to hospital on 9 February 1994, with dyspnoea and back pain on deep inspiration. He hit his back on the ground whilst skiing, 2 days prior to admission. The physical examination revealed: temperature 36.2°C; blood pressure 112/60 mmHg; pulse 64 beats min⁻¹; regular. Chest auscultation revealed normal bronchial and vesicular breath sound. The remainder was normal. No haematological or biochemical abnormalities were revealed. X-ray in the erect position seemed almost normal, but in the lateral decubitus position it showed a paramediastinal cystic lesion with fluid level in the left lung. Computed tomogram clearly demonstrated a thin-walled cystic lesion with fluid level and slight consolidation shadow due to pulmonary contusion in its surrounding lung field (Plate 1). This case was diagnosed as traumatic lung cyst, and was followed-up at the outpatient clinic. On 22 February 1994, the X-ray showed no cystic lesion

and the computed tomogram revealed appreciable reduction in the size of the cystic lesion as well.

Discussion

Traumatic lung cyst occurs less frequently than intrapulmonary haematoma or pulmonary contusion (1). Children and young adults seem to be particularly vulnerable, probably because of the great flexibility of their thoracic walls. Sorsdahl *et al.* (2) reported that 85% of patients with traumatic lung

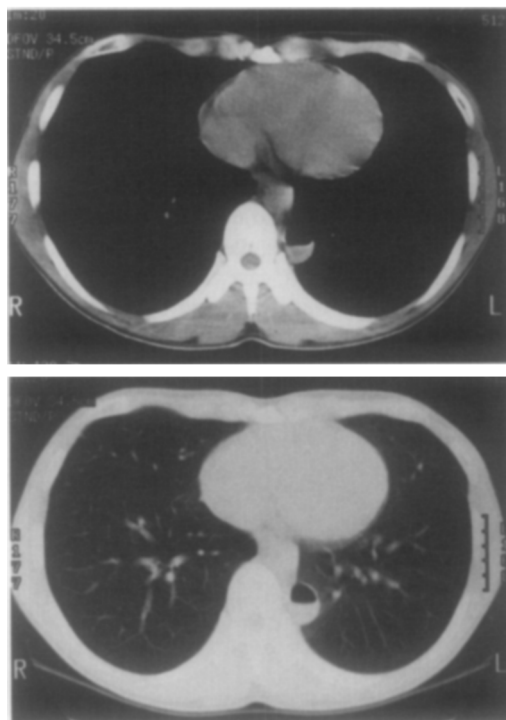


Plate 1. Computed tomography on admission showing thin-walled cyst with fluid level and slight consolidation in its surrounding lung field.

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cysts were younger than 30 years of age. Two mechanisms for development of cysts have been suggested. According to the first mechanism, sudden compression of an area of lung closes off a segment of the peripheral bronchial tree and creates a bursting, explosive pressure within it. This is expanded by the rupture of alveolar walls (3). In the second mechanism, the propagation of concussion waves creates shearing stresses that tear the substance of the lung (4).

Roentgenographically, traumatic cysts appear as single or multiple lesions (1), ranging from oval to spherical in shape and from 2 to 14 cm in diameter. Approximately half present as thin-walled air spaces, with or without a fluid level (5), and the remainder present as homogenous, well-defined masses of water density. Though the history of the accident usually makes diagnosis easy, it may be difficult to diagnose in some cases. In adults, chest X-ray findings are similar to those of lung abscess, cavitating tuberculosis, and bronchial carcinoma with cavitation (2). In children, the lesion may be confused with pneumatocele and pulmonary cyst, and pulmonary sequestration (2,6). Because virtual disappearance of radiological appearances within 1–3 weeks has been reported (7), when the cysts do not decrease in size progressively the possibility must be considered that the trauma may have been purely coincidental to a solitary cyst of other aetiology. In fact, Thorvinger *et al.* (8) reported a case of spindle cell sarcoma mimicking traumatic lung cysts. The majority of affected patients are asymptomatic, but in some patients haemoptysis, chest pain, cough, a small rise in temperature, and leukocytosis are reported (9). Because of the symptoms, pleuritis or pneumothorax were suspected in this case, and X-ray in lateral decubitus position was performed by chance. As the chest X-ray in the erect position seemed almost normal, without this lateral decubitus X-ray, the case

would have been lost with its aetiology remaining unknown. Computed tomography may be useful in diagnosing paramediastinal traumatic lung cyst like the present case and following its clinical course. The history of blunt chest trauma is most important and makes diagnosis easy. The findings of the thin-walled cystic lesion with or without fluid level of computed tomography can confirm the diagnosis. Needless to say, unnecessary examination and treatment are never offered, and despite the fever and leukocytosis, prophylactic antibiotic therapy is not necessary (7). Closer follow-up is recommended (especially in elderly adults) by computed tomography, in case trauma is purely coincidental to cysts of other aetiology.

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